(19) World Intellectual Property **Organization**

International Bureau





(43) International Publication Date 1 September 2005 (01.09.2005)

PCT

(10) International Publication Number WO 2005/081307 A1

- (51) International Patent Classification⁷: H01L 21/8246, G06K 19/07, 19/077, 19/10, H01L 27/10, 27/112, 27/12, 29/786
- (21) International Application Number:

PCT/JP2005/002680

- (22) International Filing Date: 15 February 2005 (15.02.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:

2004-045480 20 February 2004 (20.02.2004)

- (71) Applicant (for all designated States except US): SEMI-CONDUCTOR ENERGY LABORATORY CO., LTD. [JP/JP]; 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): KOYAMA, Jun [JP/JP]; c/o SEMICONDUCTOR ENERGY LABORA-TORY CO., LTD., 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).

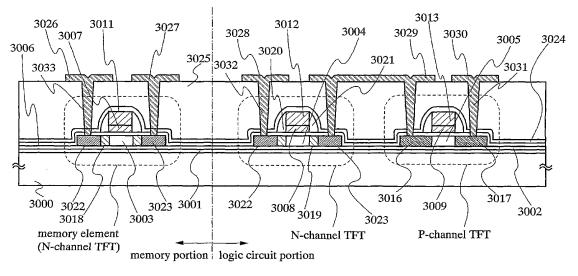
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MANUFACTURING METHOD OF SEMICONDUCTOR DEVICE, AND IC CARD, IC TAG, RFID, TRANSPON-DER, BILL, SECURITIES, PASSPORT, ELECTRONIC APPARATUS, BAG, AND GARMENT



(57) Abstract: The present invention provides a manufacturing method of a semiconductor device used as an ID chip, by which data can be written with improved throughput. According to the manufacturing method of a semiconductor device having a modulation circuit, a demodulation circuit, a logic circuit, a memory circuit, and an antenna circuit over an insulating substrate, the memory circuit is a nonvolatile memory circuit of which data is written in the manufacture of the semiconductor device, and elements in a data portion are formed by electron beam exposure or laser exposure while the other portions are formed by mirror projection exposure, step and repeat exposure, or step and scan exposure.

